

Case 3400

***Hybosorus illigeri* Reiche, 1853 (Insecta, Coleoptera): proposed conservation by giving it precedence over *Hybosorus roei* Westwood, 1845**

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Abstract. The purpose of this application, under Article 23.9.3 of the Code, is to conserve the specific name *Hybosorus illigeri* Reiche, 1853 for a well-known, widely distributed scarabaeoid beetle (family HYBOSORIDAE). The name is threatened by the senior subjective synonym *Hybosorus roei* Westwood, 1845, which after 1899 has been used twice by Ádám (1994, 2003). Therefore, precedence of the name *Hybosorus illigeri* Reiche, 1853 is proposed. Two unused senior subjective synonyms, *Hybosorus pinguis* Westwood, 1845 and *Hybosorus carolinus* LeConte, 1847, are considered nomina oblita.

Keywords. Nomenclature; taxonomy; HYBOSORIDAE; *Hybosorus illigeri*; *Hybosorus roei*; *Hybosorus pinguis*; *Hybosorus carolinus*; scarabaeoids.

1. In 1803, Illiger (1803, p. 210) described the widespread *Scarabaeus arator*, the neotype of which is in the collection of the Entomological Institute of the University of Lund, Sweden (Landin, 1964, p. 136). MacLeay (1819, p. 120) subsequently erected the genus *Hybosorus* for this species. However, as Reiche (1853, p. 87) realized, *Scarabaeus arator* Illiger is a junior primary homonym of *Scarabaeus arator* Fabricius, 1775. Reiche proposed the substitute name *Hybosorus illigeri* for *Scarabaeus arator* Illiger. Under Article 60.3 of the Code, the substitute name takes the date of its own publication and must compete for priority with any synonym recognized later.

2. A few authors (LeConte, 1862; LeConte & Horn, 1883; Quedenfeldt, 1884; Endrödi, 1957, 1959, 1962, 1968, 1970, 1973; Petrovitz, 1972; Baraud, 1977, 1985; Paulian & Baraud, 1982) have ignored the homonymy of *Scarabaeus arator* Fabricius and *Scarabaeus arator* Illiger and have continued to use *Hybosorus arator* Illiger as a valid name. This is obviously incorrect.

3. Reiche (1853) also synonymized *Hybosorus laportei* Westwood, 1845 (p. 440) and *Hybosorus thoracicus* Westwood, 1845 (p. 440) with *Scarabaeus illigeri*. However, *Hybosorus laportei* is now considered a valid species (Kuijten, 1983, p. 22), albeit partially sympatric with *Scarabaeus illigeri*, with *Hybosorus thoracicus* a

synonym. The problem is further complicated as subsequently three other names, all of which predate *Scarabaeus illigeri*, have been synonymized with *Scarabaeus illigeri*: *Hybosorus roei* Westwood, 1845 (p. 440) by Arrow (1912, p. 36); *Hybosorus pinguis* Westwood, 1845 (p. 440) by Endrödi (1957, p. 45); and *Hybosorus carolinus* LeConte, 1847 (p. 84) by LeConte (1862, p. 127). This arrangement of synonyms (and other post-1853 synonyms) is recognized as valid in the most recent taxonomic treatment of the genus (Kuijten, 1983) and in the most recent checklist of the family (Ocampo & Ballerio, 2006, p. 191). Therefore, *Hybosorus roei*, *Hybosorus pinguis* and *Hybosorus carolinus* strictly should take precedence over *Scarabaeus illigeri* (Articles 23.3.5 and 60.2 of the Code – Invalid names with synonyms).

4. The senior synonym *Hybosorus roei* remained unused until Ádám (1994, p. 9; 2003, p. 132) used it as the valid name of the species. We accept the view adopted by Krell et al. (2006) that Ádám's lists are more than 'lists of names' and are lists of taxa containing information about the distribution of the species in Hungary, thus being valid for determining usage.

5. However, most authors since 1853 have referred to the species as *Scarabaeus illigeri* in taxonomic treatments, check lists, phylogenies, faunistic lists, identification keys and notes about its distribution, biology, physiology and parasites (e.g. Lacordaire, 1856; Boheman, 1857; Harold, 1871; Lansberge, 1882; Péringuey, 1892, 1901; Brancsik, 1893; Kolbe, 1912; Benderitter, 1914; Cartwright, 1934; Müller, 1939; Paulian, 1944, 1978; Loding, 1945; Panin, 1957; Derwesh, 1965; Ritcher, 1966; Howden, 1970; Woodruff, 1973; Alfieri, 1976; Kuijten, 1980, 1983; Masters, 1980; Allsopp, 1984; Nel & Scholtz, 1990; Rozas et al., 1991; Arnold, 1992; Crocker et al., 1992; Thomas, 1993; López-Colón et al., 1996; Morón, 1996, 2003; Agoiz Bustamante, 1998, 2001; Morón et al., 1998; Deloya, 2000; Buss, 2002, 2006; Jameson, 2002; Ocampo, 2002; Weeks et al., 2003; Grebennikov & Scholtz, 2004; Grebennikov et al., 2004; Morales et al., 2004; Dupuis, 2005; Delgado & Márquez, 2006; Král & Löbl, 2006; Ocampo & Hawks, 2006), as well as numerous web sites.

6. Because the further usage of the name *H. roei* Westwood, 1845 would cause confusion and instability in nomenclature and ecology, we propose that under Article 23.9.3 of the Code the specific name *H. illigeri* be given precedence over that name, whenever they are considered synonyms. This solution is similar to that proposed by Allsopp (1982) in an application to the Commission, and similar to that advocated by Woodward (1973) and Ocampo (2002). Allsopp's proposal was complicated by the re-establishment of *H. laportei* Westwood, 1845 as a valid species and the case lapsed. Given the use of *H. roei* by Ádám (1994, 2003), the case does not meet both requirements of Article 23.9.1 and a ruling by the Commission is necessary.

7. As neither *H. pinguis* nor *H. carolinus* have been used as a valid name after 1899, and *H. illigeri* has been used as the taxon's valid name in at least 25 works published by at least 10 authors in the immediately preceding 50 years and encompassing a span of not less than 10 years (see list in paragraph 5), *H. pinguis* and *H. carolinus* are nomina oblita.

8. Although we believe that the synonymy of Kuijten (1983) is correct, there is always potential, particularly since *illigeri* was described from Portugal and *roei* from India, that *roei* and *illigeri* are distinct taxa. If *roei* is suppressed, this would necessitate a new name if *roei* was shown to be distinct from *illigeri*.

9. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to give the specific name *illigeri* Reiche, 1853, as published in the binomen *Hybosorus illigeri*, precedence over the name *roei* Westwood, 1845, as published in the binomen *Hybosorus roei*, whenever the two are considered to be synonyms;
- (2) to place on the Official List of Specific Names in Zoology the following names:
 - (a) *illigeri* Reiche, 1853, as published in the binomen *Hybosorus illigeri*, with the endorsement that it is to be given precedence over the name *roei* Westwood, 1845, as published in the binomen *Hybosorus roei*, whenever the two are considered to be synonyms;
 - (b) *roei* Westwood, 1845, as published in the binomen *Hybosorus roei*, with the endorsement that it is not to be given priority over the name *illigeri* Reiche, 1853, as published in the binomen *Hybosorus illigeri*, whenever the two are considered to be synonyms.

References

- Ádám, L. 1994. A checklist of the Hungarian Scarabaeoidea with the description of ten new taxa (Coleoptera). *Folia Entomologica Hungarica*, **55**: 5–17.
- Ádám, L. 2003. Faunisztikai adatok a Kárpát-medencéből (Coleoptera: Scarabaeoidea). *Folia Historico Naturalia Musei Matrensis*, **27**: 101–136.
- Agoiz Bustamante, J.L. 1998. Coléopteros interesantes atraídos por las luces de Peñalba (Huesca). *Boletín de Sociedad Entomológica Aragonesa*, **19**: 19–20.
- Agoiz Bustamante, J.L. 2001. Un agresivo comportamiento alimentario de *Aphodius* (*Ammoeceus*) *lusitanicus* Erichson, 1848 y nuevos datos sobre su corología y trofismo (Coleoptera, Scarabaeoidea, Aphodiidae). *Boletín de Sociedad Entomológica Aragonesa*, **29**: 79–80.
- Alfieri, A. 1976. The Coleoptera of Egypt. A systematic list of the fauna, its distribution over the country, monthly occurrence, ecological information and taxonomic notes. *Mémoires de la Société Entomologique d'Égypte*, **5**: 1–287.
- Allsopp, P.G. 1982. *Hybosorus illigeri* Reiche, 1853 (Insecta, Coleoptera): proposed conservation by use of the plenary powers. *Bulletin of Zoological Nomenclature*, **39**: 218–219.
- Allsopp, P.G. 1984. Checklist of the Hybosorinae (Coleoptera: Scarabaeidae). *Coleopterists Bulletin*, **38**: 105–117.
- Arnold, D.C. 1992. The scarab beetle *Hybosorus illigeri* (Coleoptera: Scarabaeidae: Hybosorinae) in Oklahoma. *Journal of the Kansas Entomological Society*, **65**: 92.
- Arrow, G.J. 1912. *Scarabaeidae: Pachypodinae, Pleocominae, Aclopinae, Glaphyrinae, Ochodaeinae, Orphninae, Idiostominae, Hybosorinae, Dynamopinae, Acanthocerinae, Troginae. Coleopterorum Catalogus. Pars 43. vol. 19(6), 66 pp. Junk, Berlin.*
- Baraud, J. 1977. Coléoptères Scarabaeoidea. Faune de l'Europe occidentale: Belgique, France, Grande-Bretagne, Italie, Péninsule Ibérique. *Supplément à la Nouvelle Revue d'Entomologie*, **7**: 1–352.
- Baraud, J. 1985. Coléoptères Scarabaeoidea. Faune du Nord de l'Afrique du Maroc au Sinaï. *Encyclopédie Entomologique*, **46**. 651 pp. Lechevalier, Paris.
- Benderitter, E. 1914. Ochodaeinae, Orphninae et Hybosorinae. Pp. 195–206 in: *Voyage de Ch. Alluaud et R. Jaennel en Afrique Orientale 1911–1912. Résultats Scientifiques, Coleoptera*, V. Schulz, Paris.
- Boheman, C.H. 1857. *Insecta Caffrariae Annis 1838–1845 a J.A. Wahlberg Collecta. Pars II. Cum Tab. 1. Coleoptera. (Scarabaeides)*. 396 pp. Norstedt, Holmia.
- Brancsik, K. 1893. Beiträge zur Kenntniss Nossibés und dessen Fauna nach Sendungen und Mittheilungen des Herrn P. Frey. *Jahresheft des Naturwissenschaftlichen Vereines des Trencsiner Komitates*, **15**: 202–258.
- Buss, E.A. 2002. *White Grub Biology and Management*. ENY-321/LH037. University of Florida, Gainesville. <http://edis.ifas.ufl.edu/LH037> (Accessed February 23, 2006).

- Buss, E.A.: 2006. Flight activity and relative abundance of phytophagous scarabs (Coleoptera: Scarabaeoidea) from two locations in Florida. *Florida Entomologist*, **89**: 32–40.
- Cartwright, O.L. 1934. A list of Scarabaeidae collected at Clemson College, South Carolina (Coleoptera). *Entomological News*, **45**: 237–240.
- Crocker, R.L., Cromroy, H.L., Woodruff, R.E., Nailon, W.T. & Longnecker, M.T. 1992. Incidence of *Caloglyphus phyllophagianus* (Acari: Acaridae) on adult *Phyllophaga* spp. and other Scarabaeidae (Coleoptera) in north central Texas. *Annals of the Entomological Society of America*, **85**: 462–468.
- Delgado, L. & Márquez, J. 2006. Estado del conocimiento y conservación de los coleópteros Scarabaeoidea (Insecta) del estado de Hidalgo, México. *Acta Zoológica Mexicana (n.s.)*, **22**: 57–108.
- Deloya, C. 2000. Escarabajos exóticos (Coleoptera: Scarabaeidae) para fauna de los estados de Morelos y Oaxaca. *Folia Entomologia Mexicana*, **108**: 125–126.
- Derwesh, A.I. 1965. *A Preliminary List of Identified Insects and Some Arachnids of Iraq*. 123 pp. Government Press, Directorate General of Agricultural Research Projects, Baghdad.
- Dupuis, F. 2005. L'abdomen et les genitalia des femelles de coléoptères Scarabaeoidea (Insecta, Coleoptera). *Zoosystema*, **27**: 733–823.
- Endrödi, S. 1957. Hybosorinae (Coleoptera, Lamellicornia, Scarabaeidae). *Parc National de l'Upemba. I. Mission G.F. de Witte*, **46**: 43–49.
- Endrödi, S. 1959. Zur Kenntnis der afrikanischen Phaeochrous-Arten. *Revue Zoologique et Botanique de l'Afrique*, **59**: 287–300.
- Endrödi, S. 1962. Mission zoologique de l'I.R.S.A.C. en Afrique orientale (P. Basilewsky et N. Leleup, 1957). LXIII. Coleoptera Scarabaeidae: Chironinae et Hybosorinae. *Annales de le Musée Royal de l'Afrique Centrale Zoologique, Ser. 8*, **107**: 424.
- Endrödi, S. 1968. Contributions à la connaissance de la faune entomologique de la Côte-D'Ivoire (J. Decelle, 1961–1964). IX. – Coleoptera Lucanidae, Dynastinae und Hybosorinae. *Annales de le Musée Royal de l'Afrique Centrale Zoologique, Ser. 8*, **165**: 171–175.
- Endrödi, S. 1970. Coleoptera aus Nordostafrika. Melolonthidae: Dynastinae, Scarabaeidae: Hybosorinae, Orphninae, Dynamopinae. *Notulae Entomologicae*, **50**: 73–80.
- Endrödi, S. 1973. Entomological explorations in Ghana by Dr. S. Endrödi-Younga 14. Lamellicornia (Coleoptera), I. *Annales Historico-Naturales Musei Nationalis Hungarici*, **65**: 195–229.
- Grebennikov, V.V., Ballerio, A., Ocampo, F.C. & Scholtz, C.H. 2004. Larvae of Ceratocanthidae and Hybosoridae (Coleoptera: Scarabaeoidea): study of morphology, phylogenetics analysis and evidence of paraphyly of Hybosoridae. *Systematic Entomology*, **29**: 524–543.
- Grebennikov, V.V. & Scholtz, C.H. 2004. The basal phylogeny of Scarabaeoidea (Insecta: Coleoptera) inferred from larval morphology. *Invertebrate Systematics*, **18**: 321–348.
- Harold, E. 1871. Verzeichniss der von Dr. Beccari in Bogos gesammelten coprophagen lamellicornien. *Coleopterologische Hefte*, **8**: 1–28.
- Howden, H.F. 1970. Jamaican Scarabaeidae: notes and descriptions (Coleoptera). *Canadian Entomologist*, **102**: 1–15.
- Illiger, J.C.W. 1803. Verzeichniss der in Portugall einheimischen Käfer. Erste Lieferung. *Magazin für Insektenkunde*, **2**: 186–258.
- Jameson, M.L. 2002. Hybosoridae in Arnett, R.H., Thomas, M.C., Skalley, P.E. & Frank, J.H. (Eds.), *American Beetles. Polyphaga: Scarabaeoidea through Curculionoidea*, vol. 2. Pp. 32–33. CRC Press, Boca Raton.
- Kolbe, H. 1912. Die tiergeographischen Verhältnisse der Scarabaeidengruppe der Phaeochrounen. *Entomologische Rundschau*, **29**: 153–155.
- Král, D. & Löbl, I. 2006. Family Hybosoridae Erichson, 1847 in: Löbl, I. & Smetana, A. (Eds.), *Catalogue of Palaearctic Coleoptera. Volume 3: Scarabaeoidea – Scirtoidea – Dascilloidea – Buprestoidea – Byrrhoidea*. Pp. 96–97. Apollo Books, Stenstrup.
- Krell, F-T., Ballerio, A., Smith, A.B.T. & Audisio, P. 2006. *Guorinus* Le Peletier de Saint-Fargeau & Serville, 1828 and *Osmoderma* Le Peletier de Saint-Fargeau & Serville, 1828 (Insecta, Coleoptera): proposed conservation of generic names. *Bulletin of Zoological Nomenclature*, **63**: 177–183.

- Kuijten, P.J.** 1980. Insects of Saudi Arabia Coleoptera: Fam. Scarabaeidae, Subfam. Hybosorinae. *Fauna of Saudi Arabia*, **2**: 155–156.
- Kuijten, P.J.** 1983. Revision of the genus *Hybosorus* Macleay (Coleoptera: Scarabaeidae, Hybosorinae). *Zoologische Verhandelingen*, **203**: 1–49.
- Lacordaire, T.** 1856. *Histoire Naturelle des Insectes. Genera des Coléoptères ou Exposé Méthodique et Critique de Tous les Genres Proposés Jusqu'ici dans cet Ordre d'Insectes. Tome 3. Contenant les Families des Pectinicornes et Lamellicornes*. Roret, Paris.
- Landin, B-O.** 1964. The identity of “*Scarabaeus arator* Fabricius, 1775” (Col. Lamellicornia) with the designation of neotypes of *arator* Fabr. and *arator* Illig. and a list of the insects from the Cape Colony described by Fabricius 1775. *Opuscula Entomologica*, **29**: 117–142.
- Lansberge, J.W. van.** 1882. Énumération des scarabæides rapportés du pays des Somalis (Afrique Équatoriale) par M. Révoil avec diagnoses des espèces nouvelles. *Compte Rendu Séances de la Société Entomologique de Belgique*, **26**: 21–31.
- LeConte, J.L.** 1847. Fragmenta entomologica. *Journal of the Academy of Natural Sciences of Philadelphia*, (2)**1**: 71–93.
- LeConte, J.L.** 1862. Classification of the Coleoptera of North America. *Smithsonian Miscellaneous Collections*, **3**: 1–285.
- LeConte, J.L. & Horn, G.H.** 1883. Classification of the Coleoptera of North America. *Smithsonian Miscellaneous Collections*, **507**: 1–566.
- Loding, H.P.** 1945. Catalogue of the beetles of Alabama. *Alabama Geological Survey Monographs*, **11**: 1–172.
- López-Colón, J.I., González Peña, C. & Bletran Valen, J.R.** 1996. Familias Geotrupidae, Ochodaeidae, Hybosoridae, Glaresidae y Trogidae (Insecta: Coleoptera 9 (Familias 27–31); Scarabaeoidea). *Catalogus de la Entomofauna Aragonesa, Sociedad Entomológica Aragonesa*, **12**: 3–14.
- MacLeay, W.S.** 1819. *Horae Entomologicae: or Essays on the Annulose Animals*, vol. 1. Part 1. xxx, 523 pp. Bagster, London.
- Masters, W.M.** 1980. Insect disturbance stridulation: characterization of airborne and vibrational components of the sound. *Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology*, **135**: 259–268.
- Morales, C.J.M., Nájera, R.R. & Delgado, L.** 2004. Primer registro de *Euoniticellus intermedius* (Reiche, 1849) y datos nuevos de distribución de *Digitonthophagus gazelle* (Fabricius, 1787) (Coleoptera: Scarabaeidae) e *Hybosorus illigeri* Reiche, 1853 (Coleoptera: Hybosoridae) para el estado de Chipas. *Dugesiana*, **11**: 21–23.
- Morón, M.A.** 1996. Scarabaeidae (Coleoptera). Pp. 309–328 in Llorente Bousquets, J. & García Aldrete González Soriano (Eds.), *Biodiversidad, Taxonomía y Biogeografía de Artrópodos de México: Hacia una Síntesis de su Conocimiento*. CONABIO-UNAM, México.
- Morón, M.A.** 2003. Subfamilia Hybosorinae. Pp. 112–114 in Morón, M.A. (Ed.), *Atlas de los Escarabajos de México. Coleoptera: Lamellicornia. Vol. II. Familias Scarabaeidae, Trogidae, Passalidae y Lucanidae*. Argania Editio, Barcelona.
- Morón, M.A., Deloya, C., Ramírez Campos, A. & Hernández Rodríguez, S.** 1998. Fauna de Coleoptera Lamellicornia de Sierra del Tentzo, Puebla, México. *Acta Zoológica Mexicana (n.s.)*, **79**: 77–102.
- Müller, G.** 1939. Coleoptera Cicindelidae, Carabidae, Paussidae, Dytiscidae, Gyrinidae, Hydrophilidae, Silphidae, Histeridae, Cerambycidae, Brentthidae, Scarabaeidae (partim). *Missione Biologica Paese Borana*, **2**: 244–309.
- Nel, A. & Scholtz, C.H.** 1990. Comparative morphology of the mouthparts of adult Scarabaeoidea (Coleoptera). *Entomology Memoir, Department of Agricultural Development, Republic of South Africa*, **80**: 1–84.
- Ocampo, F.C.** 2002. Hybosorids of the United States and expanding distribution of the introduced species *Hybosorus illigeri* (Coleoptera: Scarabaeoidea: Hybosoridae). *Annals of the Entomological Society of America*, **95**: 316–322.
- Ocampo, F.C. & Ballerio, A.** 2006. Phylogenetic analysis of the scarab family Hybosoridae and monographic revision of the New World subfamily Anaidinae (Coleoptera: Scarabaeoidea). 4. Catalog of the subfamilies Anaidinae, Ceratocanthinae, Hybosorinae,

- Liparocharinae, and Pachyplectrinae (Scarabaeoidea: Hybosoridae). *Bulletin of the University of Nebraska State Museum*, **19**: 178–209.
- Ocampo, F.C. & Hawks, D.C.** 2006. Phylogenetic analysis of the scarab family Hybosoridae and monographic revision of the New World subfamily Anaidinae (Coleoptera: Scarabaeoidea). 2. Molecular phylogenetics and systematic placement of the family Hybosoridae (Coleoptera: Scarabaeoidea). *Bulletin of the University of Nebraska State Museum*, **19**: 7–12.
- Panin, S.** 1957. Coleoptera Familia Scarabaeidae. *Fauna Republicii Populare Romîne Insecta*, **10**(4): 1–315.
- Paulian, R.** 1944. Hybosoridae et Trogidae (Coleoptera Lamellicornia). *Exploration du Parc National Albert Mission G.F. de Witte (1933–1935)*, **46**: 3–8.
- Paulian, R.** 1978. Coléoptères Scarabaeoidea de l'Archipel des Comores. *Mémoires Nouvelle du Muséum National d'Histoire Naturelle*, **109**: 71–78.
- Paulian, R. & Baraud, J.** 1982. *Faune des Coléoptères de France. II, Lucanoidea et Scarabaeoidea. Encyclopédie Entomologique*, 43. Lechevalier, Paris.
- Péringuey, L.** 1892. Third contribution to the South African coleopterous fauna. On beetles collected in tropical South-West Africa by Mr. A.W. Eriksson. *Transactions of the South African Philosophical Society*, **6**: 1–94.
- Péringuey, L.** 1901. Catalogue of the Coleoptera of South Africa. *Transactions of the South African Philosophical Society*, **12**: 1–563.
- Petrovitz, R.** 1972. Contribution à l'étude biologique du Sénégal septentrional XX. Coléoptères Aphodiidae et Hybosoridae. *Bulletin de l'Institut Fondamental d'Afrique Noire, ser. A*, **34**: 363–377.
- Quedenfeldt, G.** 1884. Verzeichniss der von Herrn Major a. D. von Mechow in Angola und am Quango-Strom 1878–1881 gesammelten Pectinicornen und Lamellicornen. *Berliner entomologische Zeitschrift*, **28**: 265–340.
- Reiche, L.J.** 1853. Note sur l'*Hybosorus arator* auctorum, et sur le *Trox granulatus*, F., et description d'une nouvelle espèce. *Annales de la Société Entomologique de France*, (3)**1**: 87–90.
- Ritcher, P.O.** 1966. White grubs and their allies; a study of North American scarabaeoid larvae. *Oregon State Monographs, Studies in Entomology*, **4**: 1–219.
- Rozas, L., Avila, J.M. & Sánchez-Piñero, F.** 1991. Observación de hábitos depredadores en *Hybosorus illigeri* Reiche, 1853 (Coleoptera, Scarabaeoidea, Hybosoridae). *Boletín de la Asociación Española de Entomología*, **15**: 111–115.
- Thomas, D.B.** 1993. Scarabaeidae (Coleoptera) of the Chiapanecan forests: a faunal survey and chorographic analysis. *Coleopterists Bulletin*, **47**: 363–408.
- Weeks, A.R., Velten, R. & Stouthamer, R.** 2003. Incidence of a new sex-ratio-distorting endosymbiotic bacterium among arthropods. *Proceedings of the Royal Society B: Biological Sciences*, **270**: 1857–1865.
- Westwood, J.O.** 1845. On the lamellicorn beetles which possess exerted mandibles and labrum, and 10-jointed antennae. *Transactions of the Entomological Society of London*, **4**: 155–160.
- Woodruff, R.E.** 1973. *Arthropods of Florida and Neighboring Land Areas. Volume 8. The Scarab Beetles of Florida (Coleoptera: Scarabaeidae) Part I. The Laparosticti (Subfamilies: Scarabaeinae, Aphodiinae, Hybosorinae, Ochodaeinae, Geotrupinae, Acanthocerinae)*. 220 pp. Florida Department of Agriculture and Consumer Services, Gainesville.

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Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).